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Board Gender Diversity as Corporate Governance Variable: The Influence on Audit Quality

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ABSTRACT

Purpose: This paper focused on the influence of gender diversity on audit quality of manufacturing companies that are listed on the Nigeria Stock Exchange for the period 2010 – 2018. The study investigates the influence of gender diversity as corporate governance variable on audit quality of listed manufacturing companies in Nigeria. The study recommends that firms should endeavor to diversify their board along gender line in order to appropriate the benefit of female directors.

Design/Methodology/Approach: Secondary data were collected from the audited annual reports of fifty eight (58) manufacturing companies that are listed on the Nigerian Stock Exchange and binary regression models (logit, probit and gombit) were used for the testing of the hypothesis.

Findings: The result revealed that gender diversity has a positive and significant influence on audit quality for the full sample.

Implications/Originality/Value: The study recommends that firms should endeavor to diversify their board along gender line in order to appropriate the benefit of female directors.

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1. Introduction

Corporate governance is the mechanism of directing and controlling the affairs of corporate institutions for effective managerial ability. "Corporate government is the combination of mechanism to ensure that the management (the agent) runs the firm for benefit of one or several stakeholders (principal), such may cover stakeholders, and other different types of stakeholders (mainly the large shareholders and minority shareholders) in prevention or migration of these conflicts of interest" (Ejeagbasi, Nweze, Ezeh & Nze, 2015, p. 18).

Corporate governance has several variables that can influence audit quality of listed companies. One of such variable is the gender diversity of the corporate board. Gender diversity is all about the proportion of female members on the board or females directors in the firms. The percentage of female members on corporate board to a large extends may or may not influence the quality of auditor the company is to employed. The auditor of a corporate board determines the quality of the audited financial statement of the company that the potential investors are to rely on in order to ascertain the strength and weakness of the company. And this influences their investment decision on the firm. However, this work is going to properly examine the influence of gender diversity on audit quality of companies that are listed in Nigeria.

1.1 Statement of problem

Studies have been done on corporate governance variables on audit quality across the globe. However, very few has utilize board gender diversity as corporate governance variable on audit quality (Farouk & Hassan, 2014; Enofe, Mgbane & Edegware, 2014; Ilaboya & Ohiokha, 2014; Okaro, Okafor & Okoye, 2015; Ejeagbasi, Nweze & Nze, 2015; Peel & Makepeace, 2002; Puthenpurachal & Upadhijay, 2009; Ruiz-Barbadilo, Gomez-Aquilar, Fruentes-Barbra & Garcia-Ben 2004, Adams & Ferreira, 2009; Ho & Kang, 2013). In order to fill this gap in the literature, this research was motivated to explore gender diversity influence on audit quality of manufacturing companies that are listed in Nigeria.

1.2 Objective of the study

The main objective of this study is to examine the influence of gender diversity on audit quality of listed companies in Nigeria. However, the specific objective is to determine the effect of gender diversity on audit quality of listed manufacturing companies in Nigeria.

1.3 Research Question

What influence does gender diversity has on audit quality of companies that are listed in Nigeria?

1.4 Research Hypothesis

The hypothesis is stated in null and alternative form.

H_0: Gender diversity does not have a significant relationship with audit quality of companies that are listed in Nigeria.

H_A: Gender diversity has significant relationship with audit quality of companies that are listed in Nigeria.

1.5 Scope of the Study

The study focus on gender diversity influences on audit quality of listed manufacturing companies in Nigeria for the period 2010 - 2018. The fifty eight (58) manufacturing companies that are listed on the Nigeria Stock Exchange were used for this study, i.e. health sector, ten companies; agricultural sector, five companies; consumer goods sector, twelve companies; oil and gas, twelve companies; natural resources sector, four companies and conglomerate sector six companies.

2. Methodology

2.1 Research Design

A robust design of panel data was utilized in this study and this may be seen as a combination of both the time series and cross-sectional design properties. Panel analysis permits the researcher to study the change dynamics with short time series.

2.2 Population of the Study

The study population is made up of the fifty eight (58) manufacturing companies that are listed on the Nigerian Stock Exchange (NSE) floor as at December, 2018.

2.3 Sample Size and Sampling Techniques

The entire fifty eighty (58) manufacturing firms quoted on the Stock Exchange of Nigeria were selected. As observed, the researcher intends to consider the entire population as sample size because the number of listed manufacturing firms is not in-exhaustive and that the data could be accessed.

2.4 Sources of Data

Secondary data were employed in this study. The secondary data were sourced from the audited annual report of manufacturing companies that are quote on the Nigerian Stock Exchange between the periods 2010-2018.

2.5 Method of Data Analysis

The binary regression analysis was used in this study. The choice of the binary regression analysis is centered on the ground that the dependent variable is binary, which is 0 and 1. The Logit, Probit and Gompit are the three binary regression models used in this study. The choice of this tool is that it has the aim of attaining a functional association which exists between the transformed qualitative variable known as logit, probit or gompit as well as the predictor

variable that can either be qualitative or quantitative. Also, the failure of the multiple regression models to give way to coefficients that are reliable as well as inference statistic in a condition where the dependent variable is binary also necessitated the use of binary regression method.

2.6 Model Specification

This study adopts Ilaboya and Ohiokha (2014) model. The model for Ilaboya and Ohiokha (2014) is stated below:

$AUDQUL_{it} = \alpha_0 + \alpha_1 AUDTEN_{it} + \alpha_2 AUDIND_{it} + \alpha_3 AUDSIZE_{it} + \alpha_4 COYSIZE_{it} + \alpha_5 BODIND_{it} + \mu_{it}$……. Equ.

Where,

AUDQUL = Audit Quality
AUDTEN = Audit Tenure
AUDIND = Auditor Independence
AUDSIZE = Audit Firm Size
COYSIZE = Company Size
BODIND = Board Independence
μ = Error term.

Premised on the model above, the functional form of the current study derives its model thus:

AQ = f (BGD)……..……. (i)

Where:

BGD = Board Gender Diversity

In order to account for variable omission bias, the study will use audit tenure, as control variable. When this control variable is incorporated into the model above, the functional form of the model will be:

AQ = f (BGD, ATEN)…….. ..(ii)

Where:

ATEN - Audit Tenure

However, the equation above could be restated in a binary regression form as:

$$\text{Logit(AQ)} = \ln\left(\frac{\text{P(AQ)}}{1-\text{P(AQ)}}\right) = \gamma_0 + y_1 \text{BGD} + \gamma_2 \text{ATEN} + \mu \text{…… …. ….. …. ….(iii)}$$

$$\text{Probit(AQ)} = \ln\left(\frac{\text{P(AQ)}}{1-\text{P(AQ)}}\right) = \gamma_0 + \gamma_1 \text{BGD} + \gamma_2 \text{ATEN} + \mu \text{…… …. ….. …. …. iv)}$$

$$\text{Gompit(AQ)} = \ln\left(\frac{\text{P(AQ)}}{1-\text{P(AQ)}}\right) = \gamma_0 + \gamma_1 \text{BGD} + \gamma_2 \text{ATEN} + \mu \text{…… …. ….. …. ….(v)}$$

$\gamma 0$ = Constant
$\gamma 1\text{-}2$= Unknown coefficients of the variables
μ = Error term

Decision

The decision rule is for the null hypothesis to be rejected and the alternate hypothesis to be accepted, where the value of the probability is less than 0.05 or accept the null hypothesis (H0) and reject the alternate hypothesis (HA) where, the value of the probability is equal to or greater than 0.05.

2.7 Measurement of Variables

Variables	Measurement	Nature	Notation	Source/Justification
Audit Quality	The size of the audit firm (Big 4 or non-Big 4) is been used as a proxy for audit quality.	Dependent	AQ	Enofe et al. (2014)
Board Gender Diversity	Number of females on the board	Independent	BGD	Post and Byron (2015)
Audit Tenure	Length of auditor-client relationship '1' if 3 years and '0' if	Control	ATEN	Nwanyanwu (2017)

	otherwise			

Source: Researcher, 2020

3.1 Presentation and Analysis of Data

Table 3.1: Descriptive Statistics

	AQ	BGD	ATEN
FULL SAMPLE			
Mean	0.521	0.093	4.743
Maximum	1.000	0.670	13.000
Minimum	0.000	0.000	1.000
Std. Dev.	0.500	0.117	2.739
Jarque-Bera	84.168	796	24.572
Probability	0.000	0.000	0.000
Obs.	505	505	505
CONSUMER GOODS SAMPLE			
Mean	0.705	0.118	4.757
Maximum	1.000	0.400	13.000
Minimum	0.000	0.000	1.000
Std. Dev.	0.457	0.101	2.849
Jarque-Bera	33.565	9.794	11.065
Probability	0.000	0.007	0.004
Obs.	173	173	173
OIL & GAS AND NATURAL RESOURCES SAMPLES			
Mean	0.375	0.095	4.861
Maximum	1.000	0.670	10.000
Minimum	0.000	0.000	1.000
Std. Dev.	0.486	0.152	2.818
Jarque-Bera	24.427	328	9.593
Probability	0.000	0.000	0.008
Obs.	144	144	144
CONGLOMERATE, HEALTH AND AGRICULTURE SAMPLE			
Mean	0.486	0.071	4.631
Maximum	1.000	0.380	11.000
Minimum	0.000	0.000	1.000
Std. Dev.	0.501	0.094	2.594
Jarque-Bera	29.833	39.273	9.416
Probability	0.000	0.000	0.009
Obs.	179	179	179

Source: Researchers Compilation, 2020

Where; AQ = Audit Quality; BGD = Board Gender Diversity; ATEN = Audit Tenure.

The above Table 3.1 shows the outcome of the descriptive statistics for the various variables. As indicated in the full sample, AQ measured by using 1 if the sampled firms used big-4, otherwise 0 is used. The descriptive statistics show a mean value of approximately 1 (0.521) which indicates that on the average, the sample firms used big-4 audit firms which indicates that more of the sampled firms are audited by industry specialized audit firm. The standard deviation is 0.500, indicating the extent of dispersion of the mean from the distribution. BGD measured as ratio of female directors to the total number of the board size with the mean value of 0.093 which indicates that 9.3% of the board size consists of female directors with a standard deviation of 0.117. On the control variable, ATEN measured by the number of years the audit firm has been engaged shows a mean value of 4.743 which indicates that on the average, the auditor-audittee length of relationship for the sampled firms is about 4 years with a standard deviation of 2.739. The

probability Jarque-Bera statistics values being less than 0.05 for all variables respectively indicates the absence of outliers, therefore there is evidence of normality.

On the sub-samples, for consumer goods sector, AQ shows a mean value of approximately 1 (0.705) which indicates that on the average, the consumer goods sector firms used big-4 audit firms which indicates that more of the sampled firms are audited by industry specialized audit firm with a standard deviation of 0.457. BGD that is having the mean value of 0.118 indicates that 11.8% of consumer sector firm's board size consists of female directors with a standard deviation of 0.101. On the control variable, ATEN shows a mean value of 4.757 which indicates that on the average, the auditor-audittee length of relationship for the consumer sector firms is about 4 years with a standard deviation of 2.849. The probability Jarque-Bera statistics values being less than 0.05 for all variables respectively indicates the absence of outliers, therefore there is evidence of normality.

For oil & gas and other natural resources sector, AQ shows a mean value of 0.375 which indicates that on the average, the oil & gas and other natural resources sector firms used non-big-4 audit firms which indicates that more of the oil & gas and other natural resources sector sampled firms are audited by non-industry specialized audit firm with a standard deviation of 0.486. BGD has a mean value of 0.095 which indicates that about 9.5% of the oil & gas and other natural resources sector sampled firms board size consists of female directors with a standard deviation of 0.152. On the control variable, ATEN shows a mean value of 4.861 which indicates that on the average, the auditor-audittee length of relationship for oil & gas and other natural resources sector sampled firms is about 4 years with a standard deviation of 2.818.

For conglomerate, health and agricultural sectors, AQ shows a mean value of 0.486 which indicates that on the average, the conglomerate, health and agricultural sectors firms used non-big-4 audit firms which indicates that more of the conglomerate, health and agricultural sectors firms are audited by non-industry specialized audit firm with a standard deviation of 0.501. BGD has a mean value of 0.071 which indicates that about 7.1% of the conglomerate, health and agricultural sectors firms' board size consists of female directors with a standard deviation of 0.094. On the control variable, ATEN shows a mean value of 4.631 which indicates that on the average, the auditor-audittee length of relationship in the conglomerate, health and agricultural sectors firms is about 4 years with a standard deviation of 2.594. The probability Jarque-Bera statistics values being less than 0.05 for all variables respectively indicates the absence of outliers, therefore there is evidence of normality.

Table 3.2: Correlation Result

	AQ	BGD	ATEN
FULL SAMPLE			
AQ	1		
BGD	0.198* (0.000)	1	
ATEN	0.002 (0.955)	0.074 (0.097)	1
CONSUMER GOODS SAMPLE			
AQ	1		
BGD	0.280* (0.000)	1	
ATEN	0.100 (0.186)	-0.028 (0.717)	
OIL & GAS AND NATURAL RESOURCES SAMPLE			
AQ	1		
BGD	-0.145 (0.083)	1	
ATEN	-0.202*	0.093	1

	(0.015)	(0.266)	
CONGLOMERATE, HEALTH AND AGRICULTURAL SAMPLE			
AQ	1		
BGD	0.459* (0.000)	1	
ATEN	0.087 (0.248)	0.162* (0.030)	

Source: Researcher's compilation, 2020

The above table 3.2 examined the coefficients of correlation of the various variables. The focus of our analysis here is how the dependent variable (Audit quality) correlates with the other variables. For the full sample, we ascertained that AQ is found to have a positive correlation with BGD (r = 0.198), ATEN (r = 0.002), For the consumer goods sector sample, we deduced that AQ is found to have a positive correlation with, BGD (r = 0.280), ATEN (r = 0.100), with exception to ATEN, all other variable exhibit significant relationship with AQ at 5% level of significance. For the oil and gas as well as other natural resources sector sample, we noticed that AQ is found to be negatively correlated with BGD (r = -0.145), ATEN (r= -0.202). Finally, for the consumer goods sector sample, we found that AQ is also noticed to have a correlation that is positive with BGD (r = 0.459), ATEN (r = 0.087) with exception to ATEN, all other variables exhibit significant relationship with AQ at 5% level of significance.

3.2 Binary Regression Results

Logit, Probit and Gompit are the three binary regression models that are mostly used were adopted in the study. The difference in the models is centered on the assumptions of the types of their probability distribution. The cumulative logistic probability distribution is followed by the Logit binary regression, the cumulative normal distribution is assumed by the binary Probit while the generalized extreme value distribution is followed by the Gompit binary regression. The Probit as well as the Logit regressions uses the symmetric link function while the Gompit regression make use of the asymmetric link function that is known to have been given by quartile function of the generalized extreme value random variable. The obtained binary regression results are presented in Table 3.3.

Table 3.3: Binary Regression Results (Full sample)

	Model 3 (Binary Logit)		Model 4 (Binary Probit)		Model 5 (Binary Gompit)	
	A	B	A	b	A	B
C	-4.577* (-6.025) {0.000}	-7.562* (-6.703) {0.000}	-2.658* (-6.137) {0.000}	-4.646* (-6.100) {0.000}	-2.344* (-5.106) {0.000}	-5.266* (-7.161) {0.000}
BGD	5.594* (6.018) {0.000}	5.204* (5.033) {0.000}	3.314* (6.050) {0.000}	3.059* (4.999) {0.000}	3.427* (5.354) {0.000}	3.438* (5.065) {0.000}
ATEN		-0.067 (-1.510) {0.131}		-0.036 (-1.406) {0.160}		-0.052 (-1.744) {0.081}
McFadden R-Squared LR Statistics	0.287 204.289* (0.000)	0.370 259.035* (0.000)	0.286 203.391* (0.000)	0.373 260.817* (0.000)	0.278 197.745* (0.000)	0.383 267.448* (0.000)
Log Likelihood (LL)	-253.158 Logistic	-220.085 Logistic	-253.158 Normal	-219.193 Normal	-256.430 Gev	-215.878 Gev
Probability distribution	513	505	513	505	513	505

N	248	242	248	242	248	242
Obs with Dep = 0	265	263	265	263	265	263
Obs with Dep = 1						

Note: (1) Parentheses ( ) are Z-statistic; { } are probability values
(2) * 5% significance level respective
(3) a: model without control variables; b: model with control variables
Source: Researchers Compilation, 2020

All the three estimations (Logit, Probit and Gompit) are observed in table 3.3 above. To choose from the models, the LL known as the Log Likelihood was adopted adequately. The concurrence is that, the higher the LL value, the better the results becomes. The techniques of other selected model were not considered. When the goodness-of-fits for these models is been compared, the Akaike Information Criterion (AIC) was really not used for the control of the parameters since all of them have the parameters that are the same. The Bayesian Information Criterion (BIC) was as well not used for the control of the number of observations, given that all the three models employed full samples of 513, 180 sample companies (consumer goods sample), 144 samples companies (oil & gas and natural resources sample) and 180 sample companies (conglomerate, health and agricultural sample). Each of the binary model were estimated: first excluding control variable; and second including control variable (ATEN). The result appears better in each of the model with the inclusion of control variable because the various explanatory variables jointly explain more changes in the dependent variable (AQ). The McFadden R-squared value that appears to be from the three binary regression results with the inclusion of the control variable (column b in Logit, Probit and Gompit models) indicate that, using the Logit estimation, about 37% was explained in the model, the model also explain about 37.3% when the Probit estimation was used and using the Gompit estimation, 38.3% result of dependent variable were explained in the model. Looking at the three models, the LR statistics in the models shows that all of them were found to be statistically significant and fit in giving explanation to the dependent variable result. The specifics outcome of the three binary regression models was based on Maximum Likelihood Huber/White Heteroskedasticity-consistent standard errors a covariance. This means that the reported binary regression outcome is free from the problem of Heteroskedasticity which is commonly related with cross-sectional data. In giving analysis of the marginal effects of the selected independent variables, it is ascertained that BGD appears to have a significant {@ 5%} and positive effect (Logit output, β4= 5.204, Probability = 0.000; Probit output; β4 = 3.059, Probability = 0.000; Gompit output; β4 = 3.438, Probability = 0.000) on the likelihood that a firm has audit quality. On the control variable, ATEN appears to have an insignificant {@ 5%} and negative effect (Logit output, β7= -0.067, Probability = 0.131; Probit output; β7= -0.036, Probability = 0.160; Gompit output; β7 = -0.052, Probability = 0.081) on the likelihood that a firm has audit quality.

Table 3.4: Binary Regression Results (Consumer Goods Sample)

	Model 3 (Binary Logit)		Model 4 (Binary Probit)		Model 5 (Binary Gompit)	
	A	B	A	B	A	B
C	-7.562* (-4.833) {0.000}	-9.703* (-4.095) {0.000}	-4.423* (-5.052) {0.000}	-5.784* (-4.315) {0.000}	-5.538* (-5.062) {0.000}	-7.455* (-4.456) {0.000}
BGD	6.448* (2.868) {0.004}	7.005* (2.499) {0.012}	3.839* (2.907) {0.004}	4.046* (2.567) {0.010}	4.867* (2.923) {0.004}	6.313* (2.670) {0.008}
ATEN		-0.025 (-0.279) {0.781}		-0.009 (-0.174) {0.861}		-0.050 (-0.703) {0.482}

McFadden R-Squared	0.341	0.461	0.339	0.462	0.356	0.484
LR Statistics	76.099* (0.000)	96.792* (0.000)	75.753* (0.000)	97.004* (0.000)	79.556* (0.000)	101.552* (0.000)
Log Likelihood (LL)	-73.548 Logistic	-56.510 Logistic	-73.721 Normal	-56.403 Normal	-71.819 Gev	-54.130 Gev
Probability distribution	180	173	180	173	180	173
N						
Obs with Dep = 0	56	51	56	51	56	51
Obs with Dep = 1	124	122	124	122	124	122

Note: (1) Parentheses ( ) are Z-statistic; { } are probability values
(2) * 5% significance level respective
(3) a: model without control variables; b: model with control variables
Source: Researchers Compilation (2020)

In Table 3.4, we observed that the binary regression results for the consumer goods sector sample. The value of the McFadden R-squared from the outcome of the three binary regression results indicates that the model explains about 46.1% when using the Logit estimation, about 46.2% was also explained in the model when the Probit estimation was used and using the Gompit estimation, the model then explain about 48.4% of the dependent variable result.

Looking at the three models, the LR statistics in the models shows that all of them were found to be statistically significant and fit in giving explanation to the dependent variable result. In giving the analysis of marginal effects of the explanatory variables that are selected, it is ascertained that BGD appears to have a positive and significant {@ 5%} effect (Logit output, β4= 7.005, Probability = 0.012; Probit output; β4 = 4.046, Probability = 0.010; Gompit output; β4 = 6.313, probability = 0.008) on the likelihood that a firm has audit quality. On the control variable, ATEN appears to have a negative and insignificant {@ 5%} effect (Logit output, β7= -0.025, Probability = 0.781; Probit output; β7 = -0.009, Probability = 0.861; Gompit output; β7 = -0.050, Probability = 0.482 on the likelihood that a firm has audit quality.

Table 3.5: Binary Regression Results (Oil & Gas and Natural Resources Samples)

	Model 3 (Binary Logit)		Model 4 (Binary Probit)		Model 5 (Binary Gompit)	
	A	B	A	B	A	B
C	1.729 (0.771) {0.441}	-8.943* (-1.964) {0.050}	0.839 (0.652) {0.514}	-5.313* (-2.032) {0.042}	0.674 (0.486) {0.627}	-5.167 (-1.754) {0.080}
BGD	-1.086 (-0.477) {0.633}	-1.945 (-0.592) {0.554}	-0.439 (-0.383) {0.702}	-0.895 (-0.488) {0.625}	0.030 (0.033) {0.974}	0.033 (0.019) {0.985}
ATEN		-0.141 (-1.401) {0.161}		0.072 (-1.261) {0.207}		-0.064 (-0.960) {0.337}

McFadden R-Squared	0.456	0.534	0.458	0.538	0.465	0.539
LR Statistics	86.937*	101.748*	87.305*	102.574*	88.615*	102.617*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Likelihood (LL)	51.796	-44.391	-51.612	-43.977	-50.957	-43.956
Probability distribution	Logistic	Logistic	Normal	Normal	Gev	Gev
N	144	144	144	144	144	144
Obs with Dep = 0	90	90	90	90	90	90
Obs with Dep = 1	54	54	54	54	54	54

Note: (1) Parentheses ( ) are Z-statistic; { } are probability values
(2) * 5% significance level respective
(3) a: model without control variables; b: model with control variables
Source: Researchers Compilation (2020)

In Table 3.5, we observed the binary regression results for the oil & gas and natural resources sector sample. The McFadden R-squared value from the three binary regression output revealed that about 53.4% of the model was explains when using the Logit estimation, using the Probit estimation, about 53.8% was explained in the model and when the Gompit estimation was used, the model then explains about 53.9% of the dependent variable result. Looking at the three models, the LR statistics in the model shows that all of them were found to be statistically significant and fit in giving explanation to the dependent variable result. When analyzing the marginal effects of the independent variables that are selected, it is ascertained that BGD appears to have a negative and insignificant {@ 5%} effect (Logit output, β4= -1.945, Probability = 0.554; Probit output; β4 = -0.895, Probability = 0.625; Gompit output; β4 = 0.033, Probability = 0.985) on the likelihood that a firm has audit quality. On the control variable, ATEN appears to have an insignificant {@ 5%} and negative effect (Logit output, β7= -0.141, Probability = 0.161; Probit output; β7 = 0.072, Probability = 0.207; Gompit output; β7 = -0.064, Probability = 0.337) on the likelihood that a firm has audit quality.

Table 3.6: Binary regression results (Conglomerate, Health and Agriculture Sample)

	Model 3 (Binary Logit)		Model 4 (Binary Probit)		Model 5 (Binary Gompit)	
	A	B	A	B	A	B
C	-2.166	-14.528	-1.356	-8.386*	-1.469	-10.284*
	(-1.030)	(-3.584)	(-1.084)	(-3.695)	(-1.139)	(-3.967)
	{0.308}	{0.000}	{0.278}	{0.000}	{0.255}	{0.000}
BGD	16.220*	15.689*	9.314*	9.005*	11.809*	12.829*
	(5.642)	(4.524)	(6.123)	(4.943)	(5.585)	(4.636)
	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}	{0.000}
ATEN		-0.163		-0.099		-0.103
		(-1.632)		(-1.727)		(-1.321)
		{0.103}		{0.084}		{0.186}
McFadden R-Squared	0.362	0.541	0.361	0.544	0.364	0.561
LR Statistics	90.358*	134.203*	90.010*	134.799*	90.730*	139.041*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Likelihood (LL)	-79.487	-56.902	-79.661	-56.604	-79.301	-54.483
	Logistic	Logistic	Normal	Normal	Gev	Gev

Probability distribution	180	179	180	179	180	179
N						
Obs with Dep = 0	93	92	93	92	93	92
Obs with Dep = 1	87	87	87	87	87	87

Note: (1) Parentheses ( ) are Z-statistic; { } are probability values
(2) * 5% significance level respective
(3) a: model without control variables; b: model with control variables
Source: Researchers Compilation (2020)

In Table 3.6, we observed the binary regression results for the conglomerate, health and agriculture sector sample. The McFadden R-squared value from the three binary regression results indicates that using the Logit estimation, about 53.4% was explained in the model, using the Probit estimation, about 53.8% was explained in the model and using the Gompit estimation, 53.9% of the outcome of the dependent variable was also explains in the model. Looking at the three models, the LR statistics in the model shows that all of them were found to be statistically significant and fit in giving explanation to the dependent variable result. In investigating the marginal effects of the selected independent variables, it is ascertained that BGD appears to have a positive and significant {@ 5%} effect (Logit output, β4= 15.689, Probability = 0.000; Probit output; β4 = 9.005, Probability = 0.000; Gompit output; β4 = 12.829, Probability = 0.000) on the likelihood that a firm has audit quality. On the control variable, ATEN appears to have an insignificant {@ 5%} and negative effect (Logit output, β7= -0.163, Probability = 0.103; Probit output; β7 = -0.099, Probability = 0.084; Gompit output; β7 = -0.103, probability = 0.186 on the likelihood that a firm has audit quality.

3.3 Test of Hypothesis and Discussion of the Result
In the discussion of the result, the full sample estimation result is utilized.

3.4 Board Gender Diversity and Audit Quality
The empirical estimates from our evaluation of the relationship between board gender diversity and the quality of audit revealed a relationship that is positive. Board gender diversity appears to have a significant {@ 5%} and positive effect (Logit output, β4= 5.204, Probability = 0.000; Probit output; β4 = 3.059, Probability = 0.000; Gompit output; β4 = 3.438, Probability = 0.000) on the likelihood that a firm has audit quality. Consequently, we reject the null hypothesis (H0) that board gender diversity does not have a significant relationship with audit quality. The reason for the positive relationship between board gender diversity and that of audit quality is because of the reputational effect that is associated with the presence of female at the board level (Brammer et al., 2008). In the same vein, boards with women directors have lower director attendance problems and the Chief Executive Officer (CEO) turnover in such firm is more sensitive to firm performance, consistent with more effective monitoring (Adams & Ferreira, 2009).

4. Conclusion
The progression of well-publicized cases of inappropriateness around the world, particularly those of Enron and WorldCom, and the indictment of the external auditors in these cases raised doubt about the quality of audited financial statement. This has stirred the regulatory organizations as well as professional to recommend reforms that will improve how entities are directed and controlled. For instance, in the United States, the Public Investors Protection Acts (2002) was passed. Nigeria was not left out in this global trend, several codes of corporate governance were issued by regulatory bodies like the Securities and Exchange Commission (SEC) codes on corporate governance (SEC, 2003, 2011, 2014) and the most recent code issued by Financial Reporting Council of Nigeria (FRCN, 2018). These innovations were aimed at forestalling subsequent corporate scandals. These have effects in diverse areas of corporate entities such as reporting and audit quality. In the light of the above, this paper aimed to critically examine the association existing between the corporate governance and audit quality in Nigeria. Specifically, the study looked at the effects of board gender diversity on the quality of audit.

Board gender diversity appears to have a significant and positive influence on audit quality for the full sample, consumer goods sector, conglomerate, health and agricultural sector using the three estimation techniques (Logit, Probit and Gompit). For oil & gas and natural resource sample, the result showed inverse insignificant relationship

with audit quality using Logit and Probit estimation technique while positive insignificant relationship using the Gompit estimation technique.

5. Recommendation

The study therefore recommend that: female director exhibit significant impact, therefore, firm should endeavor to diversify their board along gender line in order to appropriate the benefits female directors bring to corporate board. The importance of board gender diversity is also supported by the FRCN (2018) that corporate board should be diversified along several factors and one of such is gender diversity.

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